Believing and asserting.
Evidence from mood shift

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InQBNB 2
Inquisitiveness Below and Beyond the Sentence Boundary
Amsterdam December 18th-19th
University of Amsterdam
Plan

Is belief weak or strong?
Belief is strong
Belief is weak

Mood-choice: the homogeneity view and the strength of belief

BELIEVE in Italian: new data and proposal
A detour: Fictional predicates
Belief and (absence of) ‘objectivity’
  Futurity
  Predicates of personal taste
Types of denials and types of arguments
Analysis: First hypothesis: diasemy (Mari, 2016)

Beyond diasemy: mood as the mediator between credence and commitment

Consequences
Revisiting the entitlement equality
Commitment and Evidential Signal
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Belief and assertion

- Entitlement equality: "when you have sufficient evidence to entitle you to believe something, you have sufficient evidence to entitle you to assert something". (Hawthorne et al. 2016: 1394)
Belief and assertion

Belief entails and is entailed by assertion (Bach & Harnish 1979, Lauer 2013). - And behaves on a par with certainty.-

(1) a. It rains, #but I do not believe/I am not certain that it rains
b. I believe/I am certain that it rains, #but it does not rain.
Belief and assertion

Strong belief:

Conclusion 1: Belief is strong. It is as strong as certainty and assertion.
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Belief vs. assertion

(2) a. It is raining, #but I am not sure it is raining.
b. I believe that it is raining, but I am not sure that it is raining.

_Believe_ is also asymmetrically entailed by _be certain_ and _know_.

(3) a. I am sure that it rains, #but I do not believe it.
b. I believe that it rains, but I am not certain.
Belief is weak

Conclusion 2: Knowledge, certainty and assertion are stronger than belief.
Questions

- Is belief weak or strong?
- What is the relation between assertion and belief-statements?

The view from Italian and mood shift.
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Mood choice

**Common assumption** (see discussion in Portner, forthcoming)

- Mood choice is the phenomenon whereby the verbal mood in an embedded clause is determined by a matrix predicate. Such predicates have a modal semantics.
Hintikka (1962) semantics

(4) ‘$\alpha$ believe $p$’ is true in $w$ iff $\forall w' \in \text{Dox}_\alpha(w)$, $p$ is true in $w'$.
Homogeneity and indicative

Semantic approaches (Giannakidou, 1999; Farkas, 2003; Villalta, 2008; Anand and Hacquard, 2013):

▶ Absence of alternatives in the modal base (i.e. homogeneity) triggers indicative.

▶ Presence of alternatives ($\{p, q\}$, $\{p, \neg p\}$) (i.e. non-homogeneity) triggers subjunctive.
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▶ BELIEVE $=$ BE CERTAIN

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● Ok for French, Greek, Romanian, ....
Problems

Homogeneity-based theories stumble on the Italian facts: Mood shift with BELIEVE in Italian (*credere*):

(5) Credo che Maria sia.**SUBJ** / é.**IND** incinta. – I believe that Mary is pregnant.
Problems

Homogeneity-based theories stumble on the Italian facts:
Mood shift with BELIEVE in Italian (credere):

(5) Credo che Maria sia.\textsc{subj} / \textsc{ind} incinta. – I believe that Mary is pregnant.

And also: BE CERTAIN (essere certo/sicuro) and BE CONVINCED (essere convinto) license the subjunctive! (Mari, 2016)

(6) Sono sicura che Maria sia.\textsc{subj} / \textsc{ind} incinta. – I am certain that Mary is pregnant.

(7) Sono convinta che Maria sia.\textsc{subj} / \textsc{ind} incinta. – I am convinced that Mary is pregnant.
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And also (previously unseen): IMAGINE (immaginare) ! (Mari, 2016)

(8) Immagino che Maria sia.\textit{SUBJ} / \textit{é.IND} incinta. – I imagine that Mary is pregnant.
Is Italian belief weak?

- What is the difference between the indicative and the subjunctive versions?
- Weak or strong belief? In what respect?
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Key distinction

(meaning or use? does not matter for now)

1. **Solipsistic-Fictional** Pure imagination, dream.
2. **Inquisitive-Fictional** Conjecture about the truthiness of $p$. ‘I do not know, but according to my imagination, $p$’
Indicative-fictional

Solipsistic ‘imagine’: indicative.

(9) a. Ha sognato che era.IND andato in Italia.
He dreamt that he went to Italy.

b. Immaginava che andava.IND in Italia.
He imagined that he was going to Italy.
‘Imagine’ as conjecture: **subjunctive**

(10) Immagino che tu fossi. _SUBJ_ in ritardo, visto il traffico.
    I imagine you were late, given the traffic jam.

Intuitively: ‘I do not know’ component; evidence.
Hence ...

1. IMAGINE uses a private space. Indicative.
2. IMAGINE is used to convey conjecture. Subjunctive.
BELIEF: same distinction

- Expressive-credere – Credence.
- Inquisitive-credere – Conjecture
Sharpening the proposal for BELIEF

- **Expressive-credere – Credence.**
  The indicative-credere does not require knowability (it is compatible with knowability), it is a pure expression of credence.

- **Inquisitive-credere – Conjecture**
  The subjunctive-credere requires that $p$ be knowable, i.e. can be assigned a truth value otherwise than ‘subjectively’, i.e. relatively to an individual anchor.

Methodology: Consider contexts where, $p$ cannot be known, i.e. unless a shareable parameter is accommodated, there is no fact of the matter about $p$: futurity and predicates of personal taste.
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Futurity and knowability

- Present and past are settled and *knowable*, and the future does not exist yet, hence it is *not knowable*. If the time of evaluation of $p$ is future, $p$ cannot be known at the utterance time (see for recent discussion Giannakidou and Mari, 2017).
- We can *accommodate* a plan or a decision, and $p$ is settled and ‘knowable’ w.r.t this plan or decision.
Future orientation is possible with the subjunctive.

(11) [We are organizing a party and John is invited. Usually John does not come to parties, however, he is very much in love with Mary and Mary is coming for sure.]
Credo che venga. _SUBJ_ anche Gianni questa volta.
I believe that John is coming too this time.

see discussion in Mari, 2016
Future orientation with indicative:

(12) [My son has a tendency to forget stuff at school. My husband wants to buy an expensive scarf and asks me whether it is a good idea, or whether I believe that he will lose it.]

a. Credo che la perderà. IND.FUT.
b. #Credo che la perda. SUBJ.
   I believe that he will lose it.
The subjunctive is possible only when there is a plan or information in the background of which $p$ is settled. $p$ is ‘knowable’.

(13) a. Credo che le Olimpiadi si svolgano. **SUBJ** a Tokyo.
I believe that the Olympics will take place in Tokyo.

b. (#)Credo che la Francia perda. **SUBJ**, questa sera.
I believe that France will loose, tonight.
The subjunctive is possible only when there is a plan or information in the background of which $p$ is settled.
$p$ is ‘knowable’.

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**Conclusion: if $p$ is not knowable, the subjunctive cannot be used.**
Predicates of personal taste (PPT)

No matter what your theory is, there is no ‘fact of the matter’ with PPT (Lasersohn, 2005; Stephenson, 2006) - unlike with epistemic modals.

With PPT, $p$ is not metaphysically or circumstantially settled, $p$ is not ‘knowable’.

(14) The soup is tasty.

E.g. the tastiness of the soup is not intrinsic to the soup, it is not a ‘fact of the matter’ of the soup.
As with futurity is it possible to accommodate some form of ‘objectivity’: a standard of tastiness (as in the case of wines). There is some ‘fact of the matter’ about $p$. Given the standard $p$ is either true or false and $p$ can be ‘known’.
Elicitation Judgments Experiment (with Brent Strickland). Subjunctive in two different contexts.

Expressive context.

(15) We are looking for a restaurant with some friends. I suggest that we go to an Italian restaurant that I have already tried. Credo che sia \textit{SUBJ} buono. I believe that it is good.

Very low rated. Average 41.67 / 100.
Inquisitive context.

(16) We are looking for a restaurant with some friends. I have read a critics.
Credo che sia.\textit{SUBJ} buono.
I believe that it is good.

High rated Average 67.63 / 100
The difference is significant: 0.005842034 TTest.
Subjunctive is strongly preferred when there is ‘objective’ truth. It can be metaphysical truth or a consensus.

In the same contexts, indicative remains stable: 36.43 – 36.96: it is always possible to express a mental state.
Anti-discretionary predicates

(17) Che giorno è oggi? (What day is today?)
   a. Credo che è.IND martedì.
   b. Credo che sia.SUBJ martedì.
      ‘I believe it is Tuesday.’

▶ (17-a) states a personal opinion (not very informative).
▶ (17-b) proposes a possible answer to the question.
Interim summary

- Subjunctive: ok when $p$ is knowable.
- Indicative is blind to knowability.
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Denial with expressive


(18) A. Credo che Dio esiste.IND. - I believe that God exists.
B. #No, hai torto/non è vero. - #You are wrong/#It is not true

No handle for any type of denial. Solipsistic space and solipsistic talk.
Denial with inquisitive

- Inquisitive use. Denial can target the embedded proposition.

(19)  
A. Credo che Gianni sia_{SUBJ} a casa.  
B. #Non é vero / Ti sbagli.

- Denial strategy: you can be wrong, but not false. Weaker than assertion, but still targets \( p \).

- The denial can also target the belief itself.
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Expressive credere

‘Bare’ Hintikka semantics (see Figure 1): solipsistic mental state.
Expressive: credence

1. Expressive: one layer of meaning; doxastic only indicative

\[ \cap D_i(w_0) \text{ p-worlds only} \]
Inquisitive credere

‘Knowability’ triggers a knowledge layer.

**Inquisitive: conjecture**

- **Two-layers (doxastic + epistemic layer):** doxastic certainty and epistemic uncertainty.
Diasemy

- Diasemy, two BELIEVES: credence vs. conjecture.
- Common core: Credence is also part of the conjecture: doxastic certainty and epistemic uncertainty.
- Languages that have preferences set in such a way that subjunctive is preferred to the indicative allows us see the two meanings (see e.g. Gärtner and Eythórsson, 2017)
- Advantages: explain polysemy cross-classes (fictional, asking, ....)
A signal is detected (lack of knowledge) and it is hardwired in the semantics. Still not satisfactory, missing the point.

**Why ‘knowability’?**
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What is ‘knowability’

Subjunctive conveys that

- Truth can be assessed.
- Not necessarily a metaphysical truth, but at least truth with respect to a restricted set of worlds (returned by plans, or standards - which we can share and which allow to assign a truth value to $p$ in the context of utterance).
- We can collectively narrow down the set of worlds to what we consider to be the actual one.
The relation to the common ground

Looking at BELIEF from the standpoint of communication:

- Belief as Credence: does not aim at solving a question.
Looking at BELIEF from the standpoint of communication:

- Belief as Credence: does not aim at solving a question.
- Belief as Conjecture: aims at solving a question.
Revisiting the subjunctive-indicative distinction

(20) Mood choice - a more articulate criterion. Mood choice is dependent on the modal semantics of the predicate \textit{and}
Mood choice is a more articulate criterion. Mood choice is dependent on the modal semantics of the predicate *and* (with epistemic predicates) signals different relations between private spaces and public spaces.

see Giorgi and Pianesi 1996.
Epistemic/Fictional attitudes feature update instructions change the commitments of the participants in the conversation (speech acts/performative layer).

Public spaces (sets of worlds): negotiation spaces $N$ and common ground $C$ (Farkas and Bruce (2010:88)); negotiation spaces are supersets of common grounds.

- Assertions add $p$ to $N$ and project a future $C$ that includes the asserted proposition.
- Questions add at least two alternatives to $N$ and projects a set of $C$s, each containing only one of the possible answers to the question.

Private space (sets of worlds): $s$. 

Proposal
I will not subscribe to
\( \mathcal{N} \) and \( \mathcal{C} \) are subsets of the doxastic space \( s \) of \( \alpha \).

On this view one cannot account for the fact that a belief is consistently held privately, without being held publicly. I will argue that this type of beliefs exist and they even come in different sorts.
BELIEF-statements and update instructions.

- Assertion ‘A believes $p$’: the proposition BELIEVE-$p$ is added to $\mathcal{N}$
- What about $p$?
- $p$ is introduced by the update instruction contributed by the attitude. (see also Portner, 2007 on modals)
BELIEF-statements and update instructions.

- Assertion ‘A believes p’: the proposition BELIEVE-\(p\) is added to \(\mathcal{N}\)
- What about \(p\)?
- \(p\) is introduced by the update instruction contributed by the attitude. (see also Portner, 2007 on modals)

(21) Proposal for BELIEF:
Mary believes that \(p\)
\text{ASSERT} Mary believes-PRESENT that \(p\)
The meaning of BELIEF - and the speech acts

(22) $\llbracket \text{credere} \rrbracket^s = \lambda p. \forall w' \in s(p(w'))$
Update $\mathcal{N}$ to $\mathcal{N} \cup p$

(23) PRESENT : does not eliminate $\neg p$ worlds from $\mathcal{N}$ if any.
Mood

Mood is not a polarity item (pace Giannakidou, 1999/2016; in some way also Farkas, 2003).

→ Verbal mood, just as sentential mood, instructs as how to update the (local) context.


b. Update instruction of indicative (update assertively): For any $W$, update $W$ to $W \cap p$
The inquisitive belief.

- Subjunctive instructs to update $\mathcal{N}$ non-assertively.

(25) Inquisitive belief

\[ \llbracket \alpha \text{ credere } p_{sub} \rrbracket^s = 1 \text{ iff } \forall w' \in s(p(w')) \]

Updates $\mathcal{N}$ to $\mathcal{N} \cup p$

Belief is strong in the private space and weak in the public space.
The expressive belief.

Clash of the update instructions of *credere* and of indicative. Indicative as last resort.

(26) **Expressive belief.** \(\llbracket \alpha \text{credere } p_{ind} \rrbracket^s = \forall w' \in s(p(w'))\)

\(p\) is a belief privately or *solipsistically* held.
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1. Belief vs. Assertion: No entitlement equality

Recall: **Entitlement equality**: If you are committed in the private space then you are ready to be committed in the public space. Credence entails commitment in the public space.
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Recall: **Entitlement equality**: If you are committed in the private space then you are ready to be committed in the public space. Credence entails commitment in the public space.

Rejection of the entitlement equality.

▶ Credere+indicative: ‘privately committed’ (= credence) but neutral publicly (\(p\) can be true or false or none).

▶ Credere+subjunctive: ‘privately’ committed (= credence) and publicly partially committed.

▶ Lies: commitment in the public, but not in the private space.
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The role of evidence

Entitlement equality: a question of evidence.

And this is correct, I believe.
BE CERTAIN is an indirect evidential - inference.

1. Indirect evidence:

(27) Looking at a car.

#I am certain that it is nice.

2. Evidence can be implicative.

(28) The ball is either in A, B or C.

It is neither in A nor in B.

I am certain that it is in C.

Update Instruction of BE CERTAIN: **CONDITIONAL** (granted inferential evidence entailing $p$) **ASSERTION**: eliminate $\neg p$ worlds.

NB we can have *be certain* with subjunctive as well! Sometimes we cannot eliminate $\neg p$ worlds (not discussed here).
The evidential signal and degrees of public commitments

- Degrees of public commitments with propositional attitudes are the reflex of how beliefs are formed and on the basis of what evidence.
- I consider public commitment as requiring higher evidential standards (the case of lies set aside) than private commitment, which can be based on preferences and non rational evidence.
A variety of evidential signals

Different degrees of commitments correlate with different types of evidence.

1. Endogenous (belief + indicative)
2. Exogenous – facts (belief + subjunctive)
3. Inferential, $p$ is entailed (be certain) – strongest type of indirect evidence.
Corelation between the evidential signal and the public commitment

Update instructions correlate with evidentiality restrictions.

- **BELIEVE:**
  - uses factual evidence *and* internal perception
  - cannot eliminate $\neg p$ worlds from the negotiation space.

- **BE CERTAIN:**
  - indirect evidence that entails $p$ hence,
  - it can eliminate $\neg p$ worlds from the negotiation space.
BELIEF, BE CERTAIN, ASSERT: types of public commitments

Given the performative layer of the attitudes and their public facets:

- **BELIEVE (+subj)**: proposes \( p \) does not eliminate inconsistencies in \( \mathcal{N} \).
- **BE CERTAIN**: adds \( p \) to \( \mathcal{N} \) via entailment from indirect evidence.
- **ASSERTION**: adds \( p \) to \( \mathcal{N} \)

Outsider is **BELIEVE (+ind)**: no effect on \( \mathcal{N} \); ok with assertion only with discriminatory predicates.
4. Types of public commitments

Moorean sentences explained:

(29)  a. It rains, #but I do not believe/I am not certain that it rains
    b. I believe/I am certain that it rains, #but it does not rain.

All the asymmetric entailments are predicted.

(30)  a. It is raining, #but I am not sure it is raining.
    b. I believe that it is raining, but I am not sure that it is raining.

(31)  a. I am sure that it rains, #but I do not believe it.
    b. I believe that it rains, but I am not certain.
Conclusion - perspectives

1. Is the performative layer an ad hoc property of Italian belief? No: several types of predicates feature this layer: directives, fear predicates, ....
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2. Reducing the divide between attitudes and speech acts also provides a handle to understand why belief cannot embed questions. Belief itself poses a biased question ...
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3. Cross-linguistic variation: depends on whether mood is sensitive to the performative layer or remain private, updating the local context only.
Conclusion

Why is the subjunctive overwhelmingly used with non-factives epistemics (and fictional and ‘to find’ ...)

▶ Subjunctive indicates that there is an operation on the public space and truthfulness of $p$ is investigated.
▶ Indicative is relegated to a solipsistic space in a solipsistic talk.
Conclusion

Why is the subjunctive overwhelmingly used with non-factives epistemics (and fictional and ‘to find’ ...)

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In common conversations:

Subjunctive overwhelmingly used because we rarely engage in solipsistic talks!
Conclusion

Thank you!
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